P.T.V.A.'s
M.L.Dahanukar College of Commerce
Teaching Plan: 2022 – 2023
Department: Information Technology

Class: T.Y.B.Sc. (I.T.) – Semester VI
Subject: Software Quality Assurance
Name of the Faculty: Prof. Supritha Bhandary

Month	Topics to be Covered	Internal Assessment	Number of Lectures
DEC	**Introduction to Quality**: Historical Perspective of Quality, What is Quality?, Definitions of Quality, Total Quality Management ,Principles of Total Quality Management, Continual (Continuous) Improvement Cycle, Quality in Different Areas, Problem Solving Software Tools,		16
JAN	**Software Quality**: Introduction, Constraints of Software Product Quality Assessment Quality and Productivity Relationship, Software Development Process, Types of Products, Pillars of Quality Management System. **Fundamentals of testing:** Necessity of testing, Misconceptions about testing, testing methodologies, Unit Testing: Boundary Value Testing, Random Testing, Class Testing, Decision Table–Based Testing: Decision Tables, Decision Table Techniques, Cause-and-Effect Graphing, Guidelines and Observations, Path Testing: Program Graphs, DD-Paths, Test Coverage Metrics, Basis Path Testing, Guidelines and Observations,		22
FEB	**Software Verification and Validation**: Introduction, Verification, Methods of Verification, Types of reviews, Verification and validation activities. **V-test Model**: Testing during Proposal stage, Testing during requirement stage, Testing during test planning phase, design phase, during coding, VV Model, **Levels of Testing**: Proposal Testing, Requirement testing, Big-Bang Testing **Special Tests:** GUI Testing, Volume Testing, stress Testing		18
Mar	Software Verification and Validation smoke testing, Web Application Testing, COTS testing, Adhoc Testing, eBusiness ecommerce Testing.		04

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M. L. Dhanukar College of Commerce
Teaching Plan: 2022 – 23

Department: B. Sc.IT   **Class: T.Y.BSc. (I.T.)**   **Semester: VI**

Subject: Security in Computing

Name of the Faculty: Ms.Shruti Save

Month	Topics to be Covered	Internal Assessment	Number of Lectures
DECEMBER	**Unit I** **Information Security Overview**: The Importance of Information Protection, The Evolution of Information Security, Justifying Security Investment, Security Methodology, How to Build a Security Program, The Impossible Job, The Weakest Link, Strategy and Tactics, Business Processes vs. Technical Controls. **Risk Analysis**: Threat Definition, Types of Attacks, Risk Analysis. **Secure Design Principles**: The CIA Triad and Other Models, Defense Models, Zones of Trust, Best Practices for Network Defense. **Unit II** **Authentication and Authorization**: Authentication, Authorization **Encryption**: A Brief History of Encryption, Symmetric-Key Cryptography, Public Key Cryptography, Public Key Infrastructure.		18
JANUARY	**Unit II** **Storage Security**:Storage Security Evolution, Modern Storage Security, Risk Remediation, Best Practices. **Database Security**: General Database Security Concepts, Understanding Database Security Layers Understanding Database-Level Security, Using Application Security, Database Backup and Recovery, Keeping Your Servers Up to Date, Database Auditing and Monitoring. **UNIT III:** **Secure Network Design**: Introduction to Secure Network Design, Performance, Availability, Security.		24

	Network Device Security: Switch and Router Basics, Network Hardening. **Firewalls**: Overview, The Evolution of Firewalls, Core Firewall Functions, Additional Firewall Capabilities, Firewall Design. **Wireless Network Security**: Radio Frequency Security Basics, Data-Link Layer Wireless Security Features, Flaws, and Threats, Wireless Vulnerabilities and Mitigations, Wireless Network Hardening Practices and Recommendations. **UNIT IV:** **Intrusion Detection and Prevention Systems**: IDS Concepts, IDS Types and Detection Models, IDS Features, IDS Deployment Considerations, Security Information and Event Management (SIEM).		
FEBRUARY	**UNIT IV:** **Voice over IP (VoIP) and PBX Security**: Background, VoIP Components, VoIP Vulnerabilities and Countermeasure, Telecom Expense Management. **Operating System Security Models**: Operating System Models, Classic Security Models **UNIT V:** **Virtual Machines and Cloud Computing**: Virtual Machines, Cloud Computing. **Secure Application Design**: Secure Development Lifecycle, Application Security Practices, Web Application Security, Client Application Security, Remote Administration Security. **Physical Security**: Classification of Assets, Physical Vulnerability Assessment, Choosing Site Location for Security, Securing Assets: Locks and Entry Controls, Physical Intrusion Detection.		18

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M.L. Dahanukar College of Commerce

Teaching Plan: 2022 - 23

Department: I.T.   **Class: T.Y.B.Sc.(I.T.)**   **Semester:VI**

Subject:Business Intelligence

Name of the Faculty:Shweta D.Shirsat

Month	Topics to be Covered	Internal Assessment	Number of Lectures
December	**Business intelligence**: Effective and timely decisions, Data, information and knowledge, The role of mathematical models, Business intelligence architectures, Ethics and business intelligence **Decision support systems:** Definition of system, Representation of the decision-making process, Evolution of information systems, Definition of decision support system, Development of a decision support system **Mathematical models for decision making**: Structure of mathematical,models, Development of a model, Classes of models		15
January	**Data mining**: Definition of data mining, Representation of input data , Data mining process, Analysis methodologies **Data preparation**: Data validation, Data transformation, Data reduction **Classification**: Classification problems, Evaluation of classification models, Bayesian methods, Logistic regression, Neural networks, Support vector machines		14
February	**Business intelligence applications**: Marketing models: Relational marketing, Sales force management, **Logistic and production models**: Supply chain optimization, Optimization models for logistics planning, Revenue management		16

	systems. **Data envelopment analysis**: Efficiency measures, Efficient frontier, The CCR model, Identification of good operating practices		
March	**Knowledge Management**: An Introduction to Knowledge Management, Organizational Learning and Transformation, Knowledge Management Activities, Approaches to Knowledge Management, Information Technology (IT) In Knowledge Management, Knowledge Management, Systems Implementation, Roles of People in Knowledge Management **Artificial Intelligence and Expert Systems**: Concepts and Definitions of Artificial Intelligence, Artificial Intelligence Versus Natural Intelligence, Basic Concepts of Expert Systems, Applications of Expert Systems, Structure of Expert Systems, Knowledge Engineering, Development of Expert Systems		15

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M.L. Dahanukar College of Commerce

Teaching Plan: 2022- 23

Department: I.T.   Class: T.Y.B.Sc.(I.T.)   Semester:VI

Subject: Principles Of Geographic Information System

Name of the Faculty: Srushty Naik

Month	Topics to be Covered	Internal Assessment	Number of Lectures
December	**Unit I- Nature of GIS:** Definition, GISystem, GIScience , GIApplications ,Spatial data and Geoinformation. **Real World Representation of it:** Models and modelling,Maps, Databases, Saptial database and analysis. **Geographic Phenomena:** Definition, types, Geographic fields, Geographic objects, Boundaries. **Computer representation of geographic information:** Tessellations and types, Vector representations, Topology and spatial relationships, Scale and resolution, Representation of geographic fields and objects.		10
January	**Organizing and managing spatial data. The temporal dimension.** **Unit II- Geographic Information system:** GIS software,GIS architecture and functionality, SDI. **Stages of spatial data handling:** Storage and maintenance, Query and analysis, Data presentation. **Unit II:Database Management System:** DBMS,Alternatives for Data management, Relational Model, Querying the relational model. **Unit II: GIS and spatial database:** Linking GIS and DBMS, Spatial database functionality.		18

	Unit III: Spatial Referencing and positioning: Spatial Referencing, Satellite based positioning.		
Febraury	**Spatial data input:** Direct spatial data capture, Indirect capture, obtaining data elsewhere. **Data Quality:** Accuracy and positioning, Positional and temporal accuracy, Lineage, Completeness, Logical consistency. **Data preparation:** Data checks and repairs, combining data from multiple sources. **Unit IV: Point data transformation: Interpolation.** **Retrieval, Classification and measurement:** Measurement, selection queries, classification. **Overlay functions:** Vector and raster overlay.		16
March	**Neighbourhood functions.** **Unit IV: Network analysis, GIS and application models.** **Error propation in spatial data processing.** **Unit V: Visualization strategies.** **Cartographic toolbox.**		16

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M.L. Dahanukar College of Commerce

Teaching Plan: 2021 - 22

Department: I.T.　　**Class: T.Y.B.Sc. (I.T.)**　　　　**Semester: VI**

Subject: Cyber Laws

Name of the Faculty: Sweta Chheda

Month	Topics to be Covered	Internal Assessment	Number of Lectures
November	Introduction + Start Chapter 1		2
December	Unit I - Chap 1 - Power of Arrest Without Warrant Under the IT Act, 2000 Unit I - Chap 2 - Cyber Crime and Criminal Justice: Penalties, Adjudication and Appeals Under the IT Act,2000 Unit II – Chap 3- Contracts in the Infotech World		12
January	Unit II – Chap 4 - Jurisdiction in the Cyber World Unit III – Chap 5 - Battling Cyber Squatters and Copyright Protection in the Cyber World.		14
February	Unit IV – Chap 6 - E-Commerce Taxation: Real Problems in the Virtual World Unit IV – Chap 7 - Digital Signature, Certifying Authorities and E-Governance		16
March	Unit V – Chap 8 - The Indian Evidence Act of 1872 v. Information Technology Act, 2000 Unit V – Chap 9 - Protection of Cyber Consumers in India		16

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